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This composition approaches nearest to that of albite, excepting in a deficiency of silica, in which respect it resembles the albite from the vicinity of Wilmington, otherwise corresponding to it closely in composition, and agrees also with an albitic felspar from Pennsylvania, analyzed by Redtenbacher, in Prof. Rose's laboratory at Berlin, (Poggendorff's Annalen, Vol. LII. p. 469,) as shown by the following comparative table.

ALBITE.	Six miles N. W. of Wilmington, Del. *Booth & Boyè.*	Pennsylvania. Locality not stated. *Redtenbacher.*	Grunular Var'y. West Chester, Pa. *Booth & Boyè.*
Silica, . .	65.46	67.20	67.72
Alumina, . .	20.74	19.64*	20.54
Sesquioxide of iron,	0.54	——	a trace.
Magnesia, .	0.74	0.31	0.34
Lime, . .	0.71	1.44	0.78
Soda, . .	9.98	9.91	10.65
Potassa, . .	1.80	1.57	0.16
	99.97	100.07	100.19

On motion of Dr. Hays, it was resolved that a set of casts of fossil remains, made at the expense of the Society, be presented to Prof. Kaup, for the Museum of Darmstadt.

On motion of Mr. Booth, it was resolved, that the Curators have authority to permit Dr. Locke, of Cincinnati, to take casts from such specimens of fossils, as in their judgment may not be injured thereby, provided that the moulds be left with the Society and become their property.

Stated Meeting, June 17.

Present, twenty-nine members.

Dr. Chapman, Vice-President, in the Chair.

Letters were read:—

From E. D. Ingraham, Esq., dated 10th June, 1842, asking permission to make a transcript of Mr. Breck's unpublished memoir on the Continental Money of the United States, now in the Society's Archives:—

From the Secretary of the Committee of Physics of the

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* Redtenbacher states that the alumina contained titanic acid.

Royal Society of London, dated 5th April, 1842, transmitting the first number of the Proceedings of that Committee:—and

From Mr. William Vaughan, of London, dated 7th May, 1842, announcing the transmission by him of donations from the Royal Society to the library of this Society.

The permission asked by Mr. Ingraham was granted.

The following donations were announced:—

FOR THE LIBRARY.

Report of the Eighth Meeting of the British Association for the Advancement of Science, held at New Castle in August, 1838. 8vo. London, 1839.—*From the Association, through Col. Sabine.*

Report of the Tenth Meeting of the British Association, held at Glasgow, in August, 1840. 8vo. London, 1841.—*From the same.*

Report of the Eleventh Meeting of the British Association, held at Plymouth, in July, 1841. 8vo. London, 1842.—*From the same.*

Proceedings of the Royal Astronomical Society. Vol. V. No. 21. 8vo. London, 1842.—*From the Society.*

A Comprehensive History of the Iron Trade throughout the World, from the earliest Records to the present Period. By Harry Scrivenor. 8vo. London, 1841.—*From Mr. Jacob Snider, Jr.*

Sixth Census, or Enumeration of the Inhabitants of the United States. Folio. Washington, 1841.—*From the Hon. G. W. Toland.*

Public Documents. Senate, No. 225. House of Representatives, No. 176, No. 683.—*From the same.*

The American Medical Library and Intelligencer. By R. Dunglison, M.D. New Series. Vol. I. No. 11. For May. 8vo. Philadelphia, 1842.—*From the Editor.*

Onzième Rapport Annuel sur les Travaux de la Société d'Histoire Naturelle de l'Ile Maurice. Par M. Louis Bouton, Secrétaire. 8vo. Maurice, 1841.—*From the Society.*

Mémoires de la Société des Antiquaires de l'Amérique du Nord. Partie Linguistique. Par M. Gallatin. Paris, 1842.—*From Mr. Du Ponceau.*

The Twenty-sixth Report of the Directors of the American Asylum, at Hartford, for the Education of the Deaf and Dumb. 8vo. Hartford, 1842.—*From the Directors.*

Second Bulletin of the Proceedings of the National Institution for the Promotion of Science. From March, 1841, to February, 1842. 8vo. Washington, 1842.—*From the Institution.*

Arsberättelse om Framstegen i Fysik och Kemi afgifven den 31 Mars, 1839; af Jac. Berzelius. 8vo. Stockholm, 1840.—***From the Royal Swedish Academy.***

Kongl. Vetenskaps-Academiens Handlingar. För år 1839. 8vo. Stockholm, 1841.—***From the same.***

Arsberättelse om Technologiens Framsteg. Till Kongl. Vetenskaps-Academien afgifven den 31 Mars, 1839; af G. E. Pasch. 8vo. Stockholm, 1840.—***From the same.***

Tal af Academiens Præses, Grefve M. Rosenblad. 8vo. Stockholm, 1840.—***From the same.***

Journal of the Franklin Institute. Third Series. No. 6. For June. Philadelphia, 1842.—***From Dr. Patterson.***

Proceedings of an Indian Council, held at the Buffalo Creek Reservation, State of New York. Fourth Month, 1842. 8vo. Baltimore, 1842.—***From Mr. G. M. Justice.***

Professor Henry, of Princeton, presented the record of a series of experiments on induction from ordinary electricity, as the fifth number of his Contributions to Electricity and Magnetism, which was referred to a Committee. Of these experiments he gave a verbal account, of which the following is the substance.

In the third number of his Contributions he had shown on this subject: 1. That the discharge of a Leyden battery through a conductor developed, in an adjoining parallel conductor, an induced current, analogous to that which, under similar circumstances, is produced by a galvanic current. 2. That the direction of the induced current, as indicated by the polarity given to a steel needle, changes its sign with a change of distance of the two conductors, and also with a change in the quantity of the discharge of electricity. 3. That, when the induced current is made to act on a third conductor, a second induced current is developed, which can again develope another, and so on through a series of successive inductions. 4. That, when a plate of metal is interposed between any two of the consecutive conductors, the induced current is neutralized by the adverse action of a current in the plate.

The direction of the induced currents in all the author's experiments was indicated by the direction of the polarity given to steel needles inclosed in a spiral, the wire of which formed a part of the circuit. But some doubts were reasonably entertained of the true indications of the direction of a current by this means; since M. Savary had published, in 1826, that, when several needles are placed at different distances above a wire through which the discharge of a Leyden battery is passed, they are magnetized in different directions, and that by constantly increasing the discharge through a spiral, several reversions of the polarity of the contained needles are obtained.

It was, therefore, very important, before attempting further advances in the discovery of the laws of the phenomena, that the results obtained by M. Savary should be carefully studied; and accordingly the first experiments of the new series relate to the repetition of them. The author first attempted to obtain them by using needles of a larger size, Nos. 3 and 4, such as he had generally employed in all his previous experiments; but, although nearly a thousand needles were magnetized in the course of the experiments, he did not succeed in getting a single change in the polarity. The needles were always magnetized in a direction conformable to the direction of the electrical discharge. When, however, very fine needles were employed, he did obtain several changes in the polarity in the case of the spiral, by merely increasing the quantity of the electricity, while the direction of the discharge remained the same.

This anomaly, which has remained so long unexplained, and which at first sight appears at variance with all our theoretical ideas of the connection of electricity and magnetism, was, after considerable study, satisfactorily referred by the author to an action of the discharge of the Leyden jar, which had never before been recognised. The discharge, whatever may be its nature, is not correctly represented (employing for simplicity the theory of Franklin) by the single transfer of an imponderable fluid from one side of the jar to the other; the phenomena require us to admit ***the existence of a principal discharge in one direction, and then several reflex actions backward and forward, each more feeble than the preceding, until the equilibrium is obtained.*** All the facts are shown to be in accordance with this hypothesis, and a ready explanation is afforded by it of a number of phenomena which are to be found in the older works on electricity, but which have, until this time, remained unexplained.

The same action is evidently connected with the induction of a current on its own conductor, in the case of an open circuit, such as that of the Leyden jar, in which the two ends of the conductor are separated by the thickness of the glass. And hence, if an induced current could be produced in this case, one should also be obtained in that of a second conductor, the ends of which are separated; and this was detected by attaching to the ends of the open circuit, a quantity of insulated metal, or by connecting one end with the earth.

The next part of the research relates to a new examination of the phenomena of the change in the direction of the induced currents with a change of distance, &c. These are shown to be due to the fact that the discharge from a jar does not produce a single induced current in one direction, but several successive currents in opposite directions. The effect on the needle is principally produced by two of these: the first is the most powerful, and in the adverse direction to that of the jar; the second is less powerful, and in the same direction with that of the jar. To explain the change of polarity, let us suppose the capacity of the needle to receive magnetism to be represented by ±10, while the power of the first induced current to produce magnetism is represented by —15, and that of the second by +12; then the needle will be magnetized to saturation or to —10, by the first induced current, and immediately afterwards all this magnetism will be neutralized by the adverse second induction, and a power of +2 will remain; so that the polarity of the needle in this case will indicate an induced current in the same direction as that of the jar. Next, let the conductors be so far separated, or the charge so much diminished, that the power of the first current to develope magnetism may be reduced to —8, while that of the second current is reduced to +6, the magnetic capacity of the needle remaining the same. It is evident, then, that the first current will magnetize the needle to —8, and that the second current will immediately afterwards neutralize 6 of this; and consequently the needle will retain a magnetism of —2, or will indicate an induced current in an opposite direction to that of the jar.

In extending the researches relative to this part of the investigation, a remarkable result was obtained in regard to the distance at which inductive effects are produced by a very small quantity of electricity; a single spark from the prime conductor of the machine, of about an inch long, thrown on the end of a circuit of wire in an upper room, produced an induction sufficiently powerful to magnetize needles in a parallel circuit of wire placed in the cellar beneath, at a distance of thirty feet perpendicular, with two floors and ceilings, each fourteen inches thick, intervening. The author is disposed to adopt the hypothesis of an electrical plenum, and from the foregoing experiment it would appear, that the transfer of a single spark is sufficient to disturb perceptibly the electricity of space throughout at least a cube of 400,000 feet of capacity; and, when it is considered that the magnetism of the needle is the result of the difference of two actions, it may be further inferred, that the diffusion of motion in this case is almost comparable with that of a spark from a flint and steel in the case of light.

The author next alludes to a proposition which he advanced in the second number of his Contributions, namely, that the phenomena of dynamic induction may be referred to the known electrical laws, as given by the common theories of electricity; and he gives a number of experiments to illustrate the connection between statical and dynamical induction.

The last part of the series of experiments relates to induced currents from atmospheric electricity. By a very simple arrangement, needles are strongly magnetized in the author's study, even when the flash is at the distance of seven or eight miles, and when the thunder is scarcely audible. On this principle, he proposes a simple self-registering electrometer, connected with an elevated exploring rod.

Dr. Hare made an oral communication, in continuation of his remarks, made at the last meeting, on platinum and the metals accompanying its native grains.

He stated that, agreeably to trials made by Mr. J. R. Eckfeldt, of the mint, and Mr. Boyè, both possessing balances of exquisite accuracy, and being eminently skilful in the use of them, the specific gravity of a fused globule of iridium of sixty-seven grains in weight, obtained from a warranted specimen of iridium, purchased of Johnson and Cocke, of London, was inferred to be 21.80. Agreeably to this result, and likewise the previous observations of Breithaupt upon certain specimens of native iridium, this metal, either in this state, or as obtained in purity by chemical skill and consolidated by fusion, must be allowed that pre-eminence in density over all other bodies, which, until of late, was conceded to platinum. In fact, as contrasted with platinum, obtained by fusion without subsequent hammering, the difference would be more than one-tenth. Specimens of hammered platinum which weighed 21.23, on fusion were reduced to 19.70.

An important inference from these results was, that, as iridium is the only impurity in standard platinum, a high specific gravity indicates neither a superior degree of purity nor malleability. A piece of standard malleable platinum, of a very fine white colour, presented to Dr. Hare by his excellency Count Cancrine, the Russian minister of finance, as of the best quality of Russian platinum, proved, according to Eckfeldt, to have a specific gravity of 21.31; when a specimen, purified from iridium agreeably to the instructions of Berzelius, and which had been found pre-eminently susceptible of being beaten into leaf, weighed only 21.16.

On its first fusion, Dr. Hare found the specific gravity of rhodium, 11; precisely what, on examining his books, it was ascertained to have been made by Wollaston. But after it had crystallized superficially, as above described, it was by a magnifier discovered to be minutely porous under the facets. In this state its specific gravity was found by Eckfeldt to be 10.8.

The Committee appointed on the 29th of April, to whom were referred the reports of the Committee of purchase and sale, and of the Committee having charge of the Museum property, presented a report, the consideration of which was postponed to an adjourned meeting, to be held on the first of July next.

Dr. Harlan mentioned that the moulds of the Megalonyx bones, belonging to the Society, cannot now be found, and requested that permission may be accorded to him to have new moulds made at his own expense, under the superintendence of the Curators. On motion, the request of Dr. Harlan was granted.

Adjourned Meeting, July 1.

Present, ten members.

Rev. Dr. Bethune in the Chair.

In consequence of the smallness of the meeting, owing to the inclemency of the weather, the Society was adjourned, to meet on Tuesday evening, the 5th instant.

Adjourned Meeting, July 5.

Present, thirty-six members.

Dr. Chapman, Vice-President, in the Chair.

The report of the Committee appointed on the 29th of April was read; whereupon, on motion, the Committee was dis-